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### Research Note

## Acanthocephalans from the Orangethroat Darter, *Etheostoma spectabile*, from the Wabash Lowlands

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**ABSTRACT:** Two species of acanthocephalan parasites infected orangethroat darters collected from a stream in southwestern Indiana. *Acanthocephalus dirus* and *Pomphorhynchus bulbocolli* infected 85 and 15% of the darters examined, respectively. The difference in prevalence may be a function of food item selection patterns of the piscine host with regard to the parasites' intermediate host.

**KEY WORDS:** *Etheostoma spectabile*, orangethroat darter, *Acanthocephalus dirus*, *Pomphorhynchus bulbocolli*, Indiana.

The parasites of darters (Pisces: Percidae) have been casually mentioned by authors in the course of life history studies (see review by Page, 1983). However, except for a report by Buckner et al. (1985), little is known about the parasites of the darters inhabiting the Wabash Lowlands of southwestern Indiana. This note presents new information on the parasites infecting the orangethroat darter, *Etheostoma spectabile*.

Twenty orangethroat darters were collected from Road Brook, a first-order tributary of the Wabash River in Posey County, Indiana. Collections were made by seine between 20 December 1990 and 20 February 1991. Darters were

preserved in 10% formalin and necropsied within 24 hr of collection. Darters were examined for endoparasites by dissecting through the gastrointestinal tract from the cardiac valve to the anus. Parasites were transferred to alcohol-formalin-acetic acid, stained with Semichon's acetocarmine, and mounted whole in Permount. Food items were quantified and identified to lowest practical taxon. Voucher specimens of *Acanthocephalus dirus* (USNM Helm. Coll. No. 82689) and *Pomphorhynchus bulbocolli* (USNM Helm. Coll. No. 82690) have been placed in the USNM Helminthological Collections, Beltsville, Maryland 20705. Specimens of the orangethroat darter hosts have been placed in the Southern Illinois University Ichthyology Collection (SIUC 20246 and 20247).

Food items of this orangethroat darter population consisted primarily of chironomid larvae (67.1% of total items, 80% freq.) and isopod crustacea (22.5% of total items, 65% freq.). Amphipod crustacea (4.6% of total items, 40% freq.), tricopteran larvae (3.9%, 25% freq.), and oligochaete worms (1.7%, 5% freq.) were minor constituents of the diet. Seventeen of the 20 darters examined were parasitized by *Acanthocephalus dirus* Van Cleave, 1931 (85% prevalence), with

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a mean intensity of 5.6 worms per darter (range = 2–11). Heavy predation by this darter population upon the isopod intermediate host would seem to account for the high prevalence of this parasite (Seidenberg, 1973; Amin et al., 1980). Locally, *A. dirus* has been reported infecting the spottail darter, *Etheostoma squamiceps* (Strange, 1993) as well as 21 other species of fish (Amin, 1985; Buckner et al., 1985). Five specimens of *Pomphorhynchus bulbocolli* Linkins in Van Cleave, 1919, were collected from 3 individuals (prevalence = 15%) with a range of 1–2 worms per infected darter (mean intensity 1.7 worms per darter). The lower prevalence of this parasite within the orangethroat darter population may be related to less predation on the amphipod intermediate host. No flukes, tapeworms, or nematodes were found.

Although *A. dirus* and *P. bulbocolli* co-occur within the orangethroat darter, it is doubtful that significant interspecific competition occurs. The co-occurrence may be due to the overdispersal of either species within its definitive host populations (Dobson, 1985), because both have lower definitive host specificity than intermediate host specificity (Amin, 1978). In Kentucky, the rainbow darter, *Etheostoma caeruleum*, was also found to be host to both *A. dirus* and *P. bulbocolli* with little evidence of competitive exclusion (McDonough and Gleason, 1981). Darters are opportunistic in their feeding habits (Page, 1983), and the co-occurrence of these parasites may simply represent an overlap in resource utilization.

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